

METRIC

A-A-20126D

September 30, 1998

SUPERSEDING

A-A-20126C

September 28, 1993

COMMERCIAL ITEM DESCRIPTION

FLOUR

**The U.S. Department of Agriculture has authorized
the use of this Commercial Item Description.**

1. SCOPE.

1.1 This Commercial Item Description (CID) covers enriched wheat flour, whole wheat flour, medium color rye flour, and oat flour, packed in commercially acceptable containers, suitable for use by the Federal, State, local governments and other interested parties.

2. CLASSIFICATION.

2.1 The flour shall conform to the types, and styles in the following list which shall be specified, in the solicitation, contract, or purchase order.

Types and styles.

- Type I** - Bread flour (Hard wheat flour)
- Type II** - Bread flour (Bakers hard wheat Hearth-style) (Hearth-style bread flour may contain potassium bromate added in a quantity not exceeding 25 parts to each million parts of finished flour to achieve maximum quality acceptance Hearth-style bread products.)
- Type III** - General or All Purpose flour
- Type IV** - Cake flour (Soft wheat flour)

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any data which may improve this document should be sent to: Head, Food Quality Assurance Staff, Fruit and Vegetable Programs, Agricultural Marketing Service, U.S. Department of Agriculture, STOP 0243, 1400 Independence Ave., SW, Washington, DC 20250-0243 or telephone (202) 720-9939 or FAX (202) 690-0102.

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- Type V** - Pastry flour
- Type VI** - Whole wheat flour
- Type VII** - Rye flour
- Type VIII** - Oat flour
- Type IX** - Other

Style A - Unbleached (Wheat flour which has not been treated with a maturing ingredient, a color modifying ingredient, or any combination of maturing and color modifying ingredients.)

Style B - Bleached (Wheat flour which has been treated with a maturing ingredient, a color modifying ingredient, or any combination of maturing and color modifying ingredients.)

3. SALIENT CHARACTERISTICS.

3.1 Raw ingredients: The flour shall be prepared from clean, sound grains.

3.2 Preparation: The flour shall be prepared using good manufacturing practices.

3.2.1 Wheat flour: The wheat shall be U.S. No. 2 grade or better. Unclassed wheat and mixed wheat are excluded.

3.2.1.1 Enrichment: The wheat flour, except for whole wheat flour, shall be enriched to conform to the U.S. Standards of Identity for Enriched Flour (21 CFR 137.165).

3.2.1.2 Types of wheat flour: The six types of wheat flour shall be milled from wheat of the following classes:

- | | |
|--|---|
| Bread flour, bread flour
(Hearth-style), and whole
wheat flour | - Hard red spring
Hard red winter
Hard white wheat |
| General or All Purpose flour | - Hard red spring
Hard red winter
Soft red winter
Hard white wheat
Soft white wheat |
| Cake flour and pastry flour | - Soft red winter
Soft white wheat |

3.2.2 Rye flour: The rye shall be U.S. No. 2 grade or better.

3.2.3 Oat flour: The oat flour shall be food grade, milled from sound, cleaned oats. The oats shall be U.S. No. 2 grade or better.

3.3 Processing:

3.3.1 Wheat flour: The wheat flour shall be processed through a centrifugal impactor operated at the equipment manufacturer's recommended speed and flow rate designed to insure the destruction of all insect eggs and shall be bolted through a 9XX or finer sieve sifter. Impaction and bolting processes may be repeated at various points in the milling operation. One of these treatments shall occur immediately before entrance of the flour into the packing machinery.

3.3.2 Rye flour: The rye flour shall be processed through a centrifugal impactor to destroy insect eggs as necessary, during the processing, but at least immediately prior to entering the packing machinery.

3.3.3 Oat flour: The oat flour shall be dehulled oats that have been steamed and ground to produce a stable flour in which enzyme activity has been minimized. Granulation shall not exceed 2 percent on a U.S. Standard No. 35 sieve, nor more than 75 percent on a U.S. Standard No. 100 sieve.

3.4 Finished product: The flour shall be suitable for use in baking processes presently in common industrial use for the product(s) as specified by the type of flour and application. The rye and oat flours shall be suitable for use in combination with other food ingredients for preparation of varietal bakery products.

3.4.1 Appearance and color: The wheat flour shall have a good, characteristic color of either bleached or unbleached wheat flour. The rye flour shall be a moderately refined product consisting of rye endosperm and small amounts of other parts of the rye kernel and shall have a good, characteristic, very light, grayish-brown color. The oat flour shall have a good characteristic color of oats.

3.4.2 Odor and flavor: The wheat flour shall possess a natural wheat-flour flavor and odor. The rye flour shall possess a natural rye-flour flavor and odor. The oat flour shall possess a natural oat flavor and odor. The flour(s) shall be free from rancid, bitter, musty, and other undesirable flavors and odors.

3.4.3 Texture: The flours shall be free flowing and free from lumps.

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3.5 Age requirement: Unless otherwise specified in the solicitation, contract, or purchase order, the flour shall be manufactured not more than 60 days prior to delivery.

3.6 Analytical and physical requirements. The flour shall conform to the following requirements listed in Table I, Table II, or Table III.

TABLE I. Analytical and physical requirements for wheat flour 1/

Type	Protein level 2/ (Percent)		Ash level 2/ (Percent)	Moisture (Percent)	FN Units or GAA 3/			
	<u>Min.</u>	<u>Max.</u>	<u>Max.</u>	<u>Max.</u>	<u>Min.</u>	<u>Max.</u>	<u>Min.</u>	<u>Max.</u>
Bread flour 4/	11.3	- ----	0.50	14.0	225 -	300	300 -	600
Bread flour (Hearth-style)	13.3	- ----	0.56	14.0	200 -	300	350 -	600
General or All Purpose flour 5/	9.0	- ----	0.50	14.0	225 -	300	300 -	600
Cake flour 6/	----	- 9.3	0.42	13.5	350 -	---	----	---
Pastry flour	----	- 10.5	0.48	14.0	350 -	---	----	---
Whole wheat flour	12.0	- ----	1.90	14.0	250 -	---	----	---

1/ Analytical procedures shall be performed in accordance with the Approved Methods of the American Association of Cereal Chemists.

2/ Requirements are based on 14.0 percent moisture.

3/ Falling Number (FN) applies to all flours containing diastatic barley malt. Grain Amylase Analyzer (GAA) applies to flours containing fungal alpha-amylase. (1 to 2.5 g fungal alpha-amylase/45.36 kg [100 lb.] enriched flour.)

4/ Bread flour shall produce bread with a specific volume of not less than 4.8 when tested for specific volume by the rapeseed method.

5/ General or All Purpose flour shall produce a cake with a specific volume of not less than 2.2 without gas pockets when tested for specific volume.

6/ pH level shall be not less than 4.3 nor more than 4.7.

TABLE II. Analytical and particle size requirements for rye flour 1/

Ash level 2/ (Percent)	Moisture (Percent)	Maximum amount of material permitted on U.S. Standard woven-wire cloth sieve	
<u>Maximum</u>	<u>Maximum</u>	No. 50 <u>(Percent)</u>	No. 100 <u>(Percent)</u>
1.5	13.5	1.0	20.0

1/ Analytical procedures shall be performed in accordance with the Approved Methods of the American Association of Cereal Chemists.

2/ Requirements are based on 14.0 percent moisture.

TABLE III. Analytical requirements for oat flour 1/ 2/

Protein level (Percent)	Fat (Percent)	Ash (Percent)	Moisture (Percent)
<u>Minimum</u>	<u>Maximum</u>	<u>Maximum</u>	<u>Maximum</u>
13.5	8.0	2.2	10.0

1/ Analytical procedures shall be performed in accordance with the Approved Methods of the American Association of Cereal Chemists.

2/ Requirements are based on 10.0 percent moisture.

4. REGULATORY REQUIREMENTS.

4.1 The delivered flour shall comply with all applicable Federal, State, and local mandatory requirements and regulations relating to the preparation, packaging, labeling, storage, distribution, and be the same flour offered for sale within the commercial marketplace. Delivered flour shall comply with all applicable provisions of the Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder.

5. QUALITY ASSURANCE PROVISIONS.

5.1 Product conformance. The flour provided shall meet the salient characteristics of this CID, conform to the producer's own specifications, standards, and quality assurance practices, and be the same flour offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

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5.2 Quality assurance. When required in the solicitation, contract, or purchase order, the Federal Grain Inspection Service (FGIS), U.S. Department of Agriculture, shall determine the quality assurance of the flour according to FGIS procedures. The flour shall be examined or analyzed as applicable in accordance with applicable provisions in this CID, solicitation, contract, or purchase order, and when applicable, the United States Standards for Condition of Food Containers in effect on the date of the solicitation.

5.3 Filth test. All tests required to determine compliance with the provisions of the Federal Food, Drug, and Cosmetic Act in regard to insects, insect fragments, rodent hairs, rodent excreta, and other filth shall be made in accordance with the Official Methods of Analysis of the AOAC International or the Approved Methods of the American Association of Cereal Chemists.

5.4 Baking quality tests.

For General Purpose Flour - (Cake Formula)

<u>Step 1</u>	<u>Parts by weight</u>
Sugar	43.4
Shortening (Nonemulsified plastic vegetable shortening)	9.5
Salt	0.75
Mono- and diglycerides	0.40
Sodium aluminum phosphate	0.50
Coated monocalcium phosphate	0.05
 <u>Step 2</u>	
General purpose flour	41.4
Egg albumen	1.5
Nonfat dried milk	2.0
Bicarbonate of soda	0.5

Mixing Procedure for Cake Mix

Cream Step 1 ingredients together. Add and mix in Step 2 ingredients. After dry ingredients have been thoroughly blended, add 591.47 mL (20 fluid ounces) of water to 2.27 kg (80 ounces) of blended cake mix and mix for 2 minutes in a mechanical blender on second speed. Add an additional 591.47 mL (20 fluid ounces) of water and mix until a smooth batter is obtained. Before batter is poured into a cake pan, lightly grease the sides of the pan and add a release-type parchment paper to the bottom of the pan. Bake 450 grams of batter at 176.67°C (350°F) for 30 minutes in a round, layer, cake pan having inside dimensions of 20.32 by 3.175 cm (8 by 1-1/4 inches).

For Bread Flour

Procedures shall be performed in accordance with the method in the American Association of Cereal Chemists, as follows:

<u>Test</u>	<u>Number</u>	<u>Method</u>
Baking Quality	10-11	Sponge-Dough, Pound-Loaf

Specific Volume

Determination of specific volume for cake and bread shall be accomplished by the rapeseed displacement method. The volume shall be measured after cake or bread cools at least 2 hours in a room or chamber not exceeding 23.33°C (74°F), 55 percent relative humidity.

Remove cooled cake or loaf from pan, place in a container which is higher and greater in perimeter than the cake.

Fill the void space in the container containing the product with rapeseed so that the rapeseed is level with the top edge of the container. Measure this amount of rapeseed in whole milliliters using a graduated cylinder or equivalent measuring device.

Remove product from the container and weigh the product. The weight shall be calculated in terms of whole grams.

Fill the empty container with rapeseed so that the rapeseed is level with the top edge of the container. Measure this amount of rapeseed as specified above.

Calculate specific volume as follows:

$$\frac{\text{Volume of rapeseed in the empty container} \quad \text{---} \quad \text{Volume of rapeseed in the void space in the container containing the product}}{\text{Weight of product}} = \text{Specific volume}$$

(Cake volume shall be ascertained by subtracting volume of unoccupied space in container from container volume.)

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6. PACKAGING.

6.1 Preservation, packaging, packing, labeling, and case marking. Preservation, packaging, packing, labeling, and case marking shall be as specified in the solicitation, contract, or purchase order.

7. NOTES.

7.1 Purchasers shall specify:

- Type(s) and style(s) of flour.
- If flour is to be bromated (Type II only).
- When baking quality tests are to be performed.
- Bulk shipment.

7.2 Sources of documents.

7.2.1 Sources of information for nongovernmental documents are as follows:

Copies of the Official Methods of Analysis of the AOAC International may be obtained from: **AOAC International, 481 North Frederick Avenue, Suite 500, Gaithersburg, MD 20877.**

Copies of the Approved Methods of the American Association of Cereal Chemists may be obtained from: **American Association of Cereal Chemists, 3340 Pilot Knob Road, Saint Paul, MN 55121.**

7.2.2 Sources of information for governmental documents are as follows:

Applicable provisions of the Federal Food, Drug, and Cosmetic Act are contained in 21 CFR Parts 1 to 199. This document may be purchased from: **Superintendent of Documents, ATTN: New Orders, P.O. Box 371954, Pittsburgh, PA 15250-7954.** Credit card (MasterCard or Visa) purchases may be made by calling the Superintendent of Documents on (202) 512-1803 or on the Internet at: **<http://www.nara.gov/fedreg>.**

Copies of the United States Standards for Condition of Food Containers are available from: **Chairperson, Condition of Container Committee, U.S. Department of Agriculture, STOP 0243, 1400 Independence Avenue, SW, Washington, DC 20250-0243.**

Copies of the Official U.S. Standards for Grain are available from: **Federal Grain Inspection Service, Animal and Plant Health Inspection Service, MSD-HSB, PDMS, Room 1A28, 4700 River Road, Riverdale, MD 20737 or on the Internet at: <http://www.usda.gov/gipsa>.**

Civil agencies and other interested parties may obtain copies of this CID from: **General Services Administration, Federal Supply Service, Specifications Section, Suite 8100, 470 East L'Enfant Plaza, SW, Washington, DC 20407.**

Military activities should submit requests for copies of this CID to: **Standardization Documents Order Desk, Defense Automation Printing Service, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.**

MILITARY INTERESTS:

Military Coordinating Activity

Army - GL

Custodians

Army - GL
Navy - SA
Air Force - 50

Review Activities

Army - MD, QM
Navy - MC
DLA - SS

CIVIL AGENCY COORDINATING ACTIVITIES:

DOJ - BOP
HHS - NIH, IHS
USDA - FV
VA - OSS

PREPARING ACTIVITY:

USDA - FV

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